SECTION 1: KEY PROGRAMME DETAILS

PART A: PROGRAMME INFORMATION	
Highest Award	BEng (Hons) Electronic Engineering
Interim Award	BEng Electronic Engineering
Interim Award	DipHE Electronic Engineering
Interim Award	CertHE Electronic Engineering

Awarding Institution	UWE Bristol
Teaching Institution	UWE Bristol
Delivery Location	Frenchay Campus
Study Abroad / Exchange / Credit Recognition	Placement X Sandwich Year X Credit Recognition X Year Abroad X
Faculty Responsible For Programme	Faculty of Environment & Technology
Department Responsible For Programme	FET Dept of Engineering Design & Mathematics
Professional Statutory or Regulatory Body (PSRB) Links	Institution of Engineering and Technology (IET)
Apprenticeships	
Mode of Delivery	Part-time

ENTRY REQUIREMENTS	UCAS Tariff Points: For the current entry requirements see the UWE public website.
For Implementation From	1 Sep 2021

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ISIS Code/s	Programme Code H60G13-SEP-PT-FR-H601
	Other codes:
	JACS Electronic engineering
	HECoS 100165: Electronic Engineering
	UCAS
	SLC

SECTION 2: PROGRAMME OVERVIEW, AIMS and LEARNING OUTCOMES

PART A: PROGRAMME OVERVIEW, AIMS and LEARNING OUTCOMES

1. (Programme) Overview (c. 400 words)

The curriculum is designed for students seeking an engineering education closely aligned to engineering practice. Technical knowledge, engineering practice, business awareness and sustainability are integrated through projects and revisited to produce confident graduates able to apply their skills to novel situations and create engineering solutions that benefit society.

Professional development is placed at the heart of the curriculum. From day one, students are taken on a journey from student engineer to graduate engineer, preparing them for life as an engineering professional. Students will identify, develop and demonstrate competencies expected of a professional engineer in the workplace. Projects and activities, embedded throughout the curriculum, are designed to develop the engineering habits of mind such as: Problem-finding, Problem-solving, Visualising, Systems Thinking, Improving, and Adapting. Foundation principles of engineering science, skills and practice are integrated throughout all years of study.

The programme is designed to provide the balance of theoretical and practical understanding needed to meet the demands of the electronic engineering industry for engineering practitioners, and in particular to meet the requirements for professional accreditation in partial fulfilment of CEng. Furthermore, it caters for students with both industrial and/or academic backgrounds, to develop problem solving skills and be able to demonstrate leadership in a number of engineering settings.

The Electronic Engineering programme produces graduates with a wide range of expertise relevant to the electronics industry. Electronic engineers are employed throughout the engineering sector in the creation, maintenance and improvement of engineering operations. Consequently, Electronic engineering graduates need to be able to integrate engineering knowledge skills from across engineering and be able to be an effective member of a multidisciplinary team. The programme covers a broad range of disciplines such as digital and analogue circuit design, power electronics, control, signal processing and project management. A number of optional modules provide a deeper level of learning into more advanced and state of the art technologies. As we move closer to a more digitally connected network of systems and devices, this programme allows students to develop expertise particularly in system design, microprocessor hardware/software design and simulation and modelling techniques.

The ability to work in multidisciplinary teams on projects that require a broader view of the role of engineering in industry and society is developed through the core programme using project weeks to bring students together in problem finding and solution spaces where students are able to interact with each other, academics and external practitioners in a range of engineering fields.

The integration of knowledge, skills and practice allows the tacking of real engineering challenges and encourage students to engage with the wider role that electronic engineers and specifically engineering

PART A: PROGRAMME OVERVIEW, AIMS and LEARNING OUTCOMES

habits of mind can play in tackling global challenges. This is a modern engineering curriculum designed to attract students from diverse backgrounds able to see the future role of engineering in industry and society.

2. Educational Aims (c. 4-6 aims)

To be able to work as a graduate electronics engineer across the engineering sector as an effective member of a multidisciplinary team.

To have acquired the knowledge and understanding of scientific principles and methods necessary to underpin an education in engineering.

To be able to apply their engineering knowledge to develop and maintain complex engineering products and explore the environmental impact of engineering.

To have demonstrated an ability to integrate knowledge and understanding of core subject material in order to solve a substantial range of engineering problems, including ones of a complex nature.

To understand the competencies and social responsibilities of a professional engineer and be able to critically appraise the value and effectiveness of future engineering innovations in the field.

To have the requisite academic knowledge, skills and preparation to study for higher degrees in appropriate engineering disciplines.

3. Programme and Stage Learning Outcomes (c. 6-8 outcomes)

Programme (Learning) Outcomes (POs)

Programme Learning Outcomes

PO1	Apply scientific and analytical methods to solve engineering problems involving design, evaluation and manufacture across electrical and electronic engineering applications.
PO2	Use systems that incorporate digital hardware, algorithms, interfacing circuits and communication, sensing and actuating devices.
PO3	Design, model and build electronic engineering systems and be able to specify and assess technical designs.
PO4	Use a systems approach to establish rigorous solutions that are fit for purpose and consider all aspects of a problem including production, operation, maintenance and disposal.
PO5	Demonstrate a critical awareness of manufacturing, financial and marketing implications of design proposals
PO6	Pursue independent study, undertake enquiry into novel and unfamiliar concepts and implement change in an engineering environment.
PO7	Communicate and operate effectively, professionally and ethically either as individuals or as members of a team.
PO8	Make considered judgements and decisions on complex engineering issues in which not all facts and consequences are accurately known.

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PART B: Programme Structure

1. Structure

Year 1

Expectation is that Engineering Practice 1 will be awarded AL or AEL credit

Year 1 Compulsory Modules

Code	Module Title	Credit	Type
UFMFKS-30-1	Engineering Practice 1 2021-22	30	Compulsory

Year 2

Year 2 Compulsory Modules

Code	Module Title	Credit	Type
UFMFHT-30-1	Applied Electronics 2022-23	30	Compulsory
UFMFJT-30-1	Principles of Electrical Engineering 2022-23	30	Compulsory
UFMFGT-15-1	Programming for Engineers 2022-23	15	Compulsory

Year 3

Year 3 Compulsory Modules

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Code	Module Title	Credit	Type
UFMFQT-15-2	Digital System Design 2023-24	15	Compulsory
UFMFQS-15-2	Engineering Practice 2 2023-24	15	Compulsory
UFMFFT-15-1	Mathematical Modelling for Electronics and Robotics 2023-24	15	Compulsory
UFMFMT-30-2	Signals and Systems 2023-24	30	Compulsory

Year 4

Year 4 Compulsory modules

Code	Module Title	Credit	Type
UFMFPT-15-2	Analogue Electronic Systems 2024-25	15	Compulsory
UFMFRS-15-2	Engineering Research 2024-25	15	Compulsory
UFMFKA-30-2	Microcontrollers Applications Group Lab 2024-25	30	Compulsory

Year 5

Year 5 Compulsory Modules

Code	Module Title	Credit	Type
UFMFV8-15-3	Group Design and Integration Project 2025-26	15	Compulsory
UFMFST-30-3	Power Electronics and Energy Systems 2025-26	30	Compulsory

Year 5 Optional Modules
the student must select 15 credits from Optional Modules

Code	Module Title	Credit	Type
UFMF89-15-3	Industrial Placement 2025-26	15	Optional
UFMFNQ-15-3	Professionalism for Engineers 2025-26	15	Optional

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Year 6

Year 6 Compulsory Modules
The student must select 45 credits from Compulsory Modules

Code	Module Title	Credit	Type
UFMFW7-15-3	Control Systems Design 2026-27	15	Compulsory
UFMFX8-30-3	Engineering Project 2026-27	30	Compulsory

Year 6 Optional Modules

Code	Module Title	Credit	Type
UFMFVT-15-3	Advanced Analogue Electronics 2026-27	15	Optional
UFMFS7-15-3	Communications 2026-27	15	Optional
UFMFH8-15-3	Digital Signal Processing 2026-27	15	Optional

PART C: Higher Education Achievement Record (HEAR) Synopsis

Designed in conjunction with key national and multi-national employers, the programme provides graduates with the mix of skills and capabilities required by UK business for the specification, design and delivery of electronic and embedded systems and solutions, including safety critical systems, as required by the aerospace, transport, medical, military and other industries.

Delivered in a way that develops technically competent individuals who think and communicate effectively and who can conduct inquiry, solve problems, undertake critical analysis and deliver effective electronic and embedded software systems solutions in a constantly changing business context. It provides a solid foundation for lifelong learning, emphasising the development of knowledge, skills and professional values essential to the practice of systems development.

PART D: EXTERNAL REFERENCE POINTS AND BENCHMARKS

Description of how the following reference points and benchmarks have been used in the design of the programme:

QAA UK Quality Code for HE (October 2019)

Framework for higher education qualifications (FHEQ)

Subject benchmark statement for Higher Education qualifications in engineering (October 2019)

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PART D: EXTERNAL REFERENCE POINTS AND BENCHMARKS

Strategy 2030

University policies

Staff research projects

IET requirements: AHEP3

Industrial Advisory Board

DA standard ST0151, Embedded Electronic Systems Design and Development Engineer.

DA standard ST0025, Manufacturing Engineer.

The learning outcomes required by the Engineering Council UK are mandatory for accredited engineering programmes. The specific outcomes are derived from the requirements for electronic engineering described in the IET Learning Outcomes Handbook for BEng programmes. There are constraints from IET that have been taken into account, for example, that a minimum of 40% written examinations across the programme is considered an acceptable form of controlled assessment. Whilst this provides a constraint on the style of assessments, it does not inhibit our integrated learning approach.

The modules have been designed to ensure adequate and appropriate coverage of these outcomes across the levels of study.

SEEC level descriptors have informed the design of the assessment of the learning outcomes.

University strategies and policies: This programme is a refreshed and updated version of a programme that has run for many years. It has a long tradition of accepting students from diverse backgrounds and a wide range of entry qualifications. It accommodates student entry on a part-time basis at several points within the programme as well as having a tradition of direct entry to year 2 for full-time overseas students. Modules within the programme are also delivered within partner institutions regionally and globally. Foundation degrees and higher apprenticeship schemes have been developed in conjunction with academic and industrial partners as feeders into this programme.

The new curriculum has been designed to take the best practice from the previous structure along with the introduction of the integrated learning framework. This, when combined with the new laboratories, will provide enhanced student experience.

Employer interaction and feedback: The Department of Engineering Design & Mathematics works with a number of industrial partners through two consortia and a newly formed industrial liaison panel. Feedback from employers during visits to placement students has also has also helped inform this revised programme. The programme provides part-time options which ensure an ongoing interaction with regional employers. This specification provides a concise summary of the main features of the programme and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. More detailed information on the learning outcomes, content and teaching, learning and assessment methods of individual modules can be found in module specifications, available on the University's website.

PART E: REGULATIONS

B: Approved variant to University Academic Regulations and Procedures

The Institution for Engineering and Technology accreditation requirements:

All level 5 and 6 credits are considered when calculating the Degree classification.

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The degree classification for the 360 credit honours degrees BEng (Hons) Electrical and Electronic Engineering, BEng (Hons) Electronic Engineering, BEng (Hons) Robotics and BEng (Hons) Electronics and Computer Engineering (or 480 credit honours degree with an integrated foundation year) is based upon all the marks achieved at level 5 and all the marks achieved at level 6. Marks achieved for level 6 credits are weighted three times the value of the marks for the level 5 credits (Paper AB16/05/07).

Condoned Credit

From September 2020 intake onwards to comply with conditions set out by Engineering Council UK we will only be able to condone a maximum of 30 credits across the whole programme.

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